MICROTECTOR II G460
Short-form operation manual

Firmware Version 3.40
205-003.36_OM_G460_Short.doc, Version 24.09.2010

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Detection principle
Electrochemical (EC): toxic gases and oxygen
Catalytic combustion (CC): combustible gases and vapours (up to 100 %LEL)
Infrared (IR): Carbon dioxide

Operational conditions
-20...+50 °C | 5...95% r.h. | 700...1300hPa

Operational time
up to 20 hours

Power Supply
1. NiMH battery pack, rechargeable, black housing, I_m=0.6 A (max. charging current) **or**
2. Alkaline battery pack, not rechargeable, grey housing, with 2x size AA Duracell MN1500 LR6

Housing
Material: Rubberized plastic
Dimensions: 75 x 110 x 55 mm (WxHxD)
Weight: 350g
Protection: IP67

Approval
ATEX ⓔ II 2G Ex ia de IIC
T4: NiMH II –20°C ≤ Ta ≤+50°C
Alkaline –20°C ≤ Ta ≤+45°C
T3: NiMH II –20 °C ≤ Ta ≤+50 °C
Alkaline–20 °C ≤ Ta ≤+50 °C

For a proper performance of the device it is necessary to notice, that all charging contacts will always kept clean. Dirt can be removed with a slightly wet piece of cloth. Do not use solvents or cleaning agents!

Switching on **Switching off**	Hold right key ● for 1 second to turn the detector on. A self-test is effected and informs about software version, sensors, detection ranges, alarm thresholds and date of next inspection. The G460 tests the sensors, monitors their adjustments and the intervals for bump test or calibration. The relevant messages are displayed when the detector starts up. For **switching off** keep the right key ● pressed for about 5 seconds.
AutoCal	By simultaneously pressing the middle and right key the AutoCal-menu is started. By pressing the right key (**AIR**) the automatic fresh air adjustment commonly for all (enabled) sensors, except the CO_2 sensor, is started. When the detector is equipped with an oxygen sensor, its sensitivity is set to the normal 20.9%Vol oxygen concentration which is present in fresh air.

Alarm type	Sensors	Number of Alarms	Description
Instantaneous (AL)	oxygen, combustible and toxic gases	3 3 2	A **threshold alarm** is triggered, if the gas concentration exceeds (for O_2) or falls below a pre-set value. The alarm thresholds are adjustable.
Short-term average (STEL)	toxic gases	1	**Short-term exposure levels** (STEL) are the average over a period of 15 minutes. The alarm is not latching but resets automatically when falling below the STEL value.
Time weighted average (TWA)	toxic gases	1	**Time weighted average** (TWA) refers to a working shift of 8 hours. The TWA alarm cannot be reset. It only turns off when the detector is switched off.

Turn display by 180°	The display can be turned by 180° by shortly pressing the right and the left key simultaneously. This allows easy reading when carrying the detector on the belt.
Zoom-display Detection values, average and peak value	For reading individual values in **Zoom** mode, press the right key **ZOOM**. Press the key, to display one value in **Zoom** mode. Pressing the right key repeatedly will indicate measurement values of the individual sensors in zoomed reading one after the other. When a zoomed value is displayed, hold **ZOOM** to change to detail reading of measurement value, maximum and average value.
Peak display **Peak memory reset** **Deactivation**	In **Peak** mode (activation by pressing the left key **PEAK**) **peak values** can be monitored and displayed. The display shows an animated symbol in the left bottom corner. Within the zoom display the peak value is shown in the right top corner instead of the actual gas concentration. Press **RESET** in Peak mode and the Peak memory will be reset to the actual gas concentration. Press **RESET** in Zoom mode and the Peak memory and the maximum hold memory will be reset to the actual gas concentration. Pressing **PEAK** de-activates the **Peak** mode.
Lights (lamp)	If the battery pack provides the torch function, the lights can be turned on by pressing the left key for about 3 seconds pressing the left key shortly turns them off.
Service mode **Access code** **Main menu**	The **service mode** is activated by pressing the middle key **RESET** for about 4 seconds. The service mode allows adjusting the G460 by changing certain program parameters. Some menu points are only accessible by entering a special **access code**. The access code prevents important functions from being changed incidentally or by unauthorized persons. In service mode the alarms are not triggered. The **Main menu** is the first menu point in the service mode. It allows to adjust different options: • **Location** (= entering a location) • **User** (= entering of user identification) • **Data logger** (= setting of data logger functions) • **Signal** (= setting of confidential beep) • **Service** (= opens service menu) • **AutoCal** (= calibration with fresh air or test gas) • **Options** (= setting of contrast and alarm volume) The menu control is self-explanatory: different key functions will always be shown in the display by symbols above each key.
Service menu **System menu** **Sensor specific functions**	By choosing main menu point **Service** the service menu will be opened. In the service menu the G460 can be adjusted by changing of program parameters. From here you can go to the system menu to select different options: • **Bump test** (status, date of last and next Bump test, interval) • **Calibration** (status, date of last and next calibration, interval) • **Inspection** (= Date of next inspection) • **Time** (= date and time) • **Options** (selection of menu language, vibration alarm on/off, latching alarm on/off, auto store on/off) • **Sensor selection** (= activation resp. de-activation of individual sensors) • **AutoCal – Air** (= adjustment with fresh air) • **AutoCal – Gas** (= adjustment with gas) • **Information** (= Information about detector type, software version, serial number and battery type) The selection of **Sensors** allows to adjust sensor specific functions: • Zeroing (= zero point adjustment) • Calibration (= adjustment of the sensitivity) • Adjustment of alarm thresholds • Calibration data (=date and status of last zero and sensitivity calibration) • Information (= sensor information: sensor type, serial number, detection range, temperature range)

The detector must not be charged in hazardous areas. The detector must not be opened in hazardous areas and therefore battery resp. rechargeable battery must not be replaced in hazardous areas.